Louisiana Department of Environmental Quality (LDEQ)
Office of Environmental Services

STATEMENT OF BASIS

Hexion Specialty Chemicals, Inc.
Norco Facility
Hexion Flare and Associated Fugitive Emissions
Norco, St. Charles Parish, Louisiana
Agency Interest Number: 87883
Activity Number: PER20070006
Draft Permit #2764-V2

I. APPLICANT:

Company:
Hexion Specialty Chemicals, Inc.
16122 River Road, Norco, LA 70079

Facility:
Hexion Norco Facility
16122 River Road, Norco, St. Charles Parish, Louisiana
Approximate UTM coordinates are 748.552 kilometers East and 3321.696 kilometers North, Zone 15.

II. FACILITY AND CURRENT PERMIT STATUS:

Hexion Specialty Chemicals, Inc. (Hexion) owns and operates a facility in Norco, in St. Charles Parish. The chemicals manufactured at the Hexion Norco Facility include allyl chloride (AC), crude and finished epichlorohydrin (ECH), hydrochloric acid (HCl), $CaCl_2$ solutions, and epoxy resins and related products. Primary raw materials include propylene, chlorine, caustic, crude trichloropropane (TCP), and lime. In addition to the process units, Hexion operates an elevated flare, steam-assisted with associated fugitive emissions (Source IDs 108 and 230, respectively).

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The present Title V permit for each unit at the Hexion Norco Facility is as follows:

Unit	Permit #	Date Issued	Title V Permit Status
C-Unit and $CaCl_2$ Unit	2869-V2	04/03/2006	Title V Permit received.
HPRU	2586-V1	12/20/2006	Title V Permit received.
Elevated Flare and associated fugitive emissions	2764-V1	03/21/2003	Title V Permit received.
Organic Chloride Incinerators	2252-V1	03/19/2007 and amended 07/17/2007	Title V Permit received.
Utilities Unit	2914-V0	03/10/2005	Title V Permit received.
Elevated Flare and associated fugitive emissions	2764-V2	Pending	Title V Renewal Application submitted to LDEQ in September 2007.

III. PROPOSED PERMIT / PROJECT INFORMATION:

Proposed Permit

A permit application and Emission Inventory Questionnaire (EIQ) dated September 12, 2007 were received requesting a renewal and modification to Part 70 operating permit No. 2764-V1, issued March 21, 2003, for the Hexion flare and associated fugitive emissions (Source ID 108 and 230, respectively). Additional information was received November 30, 2007 and January 7, 2008.

A notice requesting public comment on the proposed permit was published in The Advocate, Baton Rouge, Louisiana and in the local newspaper in St. Charles Parish. The proposed permit was also sent to the US EPA Region VI.

Project description

This application serves as a renewal application for Part 70 Operating Permit No. 2764-V1, for the Hexion elevated flare (Source ID 108) and associated fugitive emissions. The Hexion flare is a steam-assisted flare. It is a control device for vent streams on both a routine and emergency basis. Routine emissions from the flare result from the combustion of natural gas in the flare pilots and process off-gases. The flare receives vent streams via vent header systems from both on-site

and off-site sources for emissions control. Off-site flare streams are vented from certain adjacent Shell Chemical Company (Shell) vents and Union Carbide Company (UCC) vents (UCC is a wholly owned subsidiary of Dow Chemical). Following is a list of all vents both on-site and off-site to the flare:

Hexion Vents
PCV Wet Propylene Storage V-C204 venting
PCV venting to maintain V-C232 pressure
Analyzer vents (FE101, FE201)
Pump seals-propylene bottoms
Compressor seals (KC101, KAN101, KC201)
C-100 Dryer Regeneration Venting
C-200 Dryer Regeneration Venting
C Unit Dryer Regeneration-NG Fuel System Diversions
Pilot Gas
Flare Entry (flare header entries during maintenance)
Natural Gas Purge
C Unit Shutdown

Shell Vents
Operational Vents
Butylene Railcar Loading
WS Sphere Maintenance Vents
Butylene Barge Exports across WS Wharf
Butylene Storage Sphere (V-6006A)
Butylene Storage Sphere (V-6006B)
Butylene Storage Sphere (V-6006C)
Butylene Storage Sphere (V-6006D)
Butylene Storage Sphere (V-6006E)
1,3-Butadiene Wharf Loading

UCC Vents
SCC Catalyst Drying

Emissions from the flare consist of typical products of combustion, including particulate matter (PM), sulfur dioxide (SO_2), nitrogen oxides (NOx), carbon monoxide (CO), and VOC's which include certain hazardous/toxic air pollutant (HAP/TAP) compounds. In addition, there are fugitive emissions associated with certain components of the flare header system.

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This application includes the reconciliation of the emission estimations for existing sources to incorporate the most current calculation methodologies, updated emission factors, updated vent stream flow rates, and revised pollutant speciation. The updates include the following:

- Calculation and incorporation of emissions for a natural gas purge to the flare.
- Reconciled delta pressure and percent vapor volume during depressurization for Shell Chemical Company's Butylene Barge Exports to West Site Wharf vent stream to the Hexion Flare System.
- Reconciled flow rates calculated for the Hexion Start-up/Shutdown/Maintenance vent stream, V-C204 vent stream, analyzer vents vent stream, flare pilot gas, and flare entry. The flow rates were reconciled to reflect more recently available historical and/or process data.
- Removal of several Shell vent streams and changes to existing vent stream emissions calculations due to permanent shutdown of the Shell M-Unit.
- Change in calculation methodology for max hourly emissions for the UCC vent stream. These calculation methodology changes increased the Hexion flare max hourly PTE emissions for several pollutants.
- The fugitive emissions associated with the Hexion flare (Source ID 230) were reconciled to incorporate components newly designated as part of the Hexion flare system in the Hexion Leak Detection and Repair (LDAR) database. These existing components were previously incorporated into the potential to emit (PTE) fugitive emissions calculations for the operating units. Since leaks from these components are tracked as part of the flare system, the PTE fugitive emissions for the flare were reconciled to include the existing components.
- There were several insignificant activities included in Title V Permit No. 2764-V1. These insignificant activities were facility-wide activities and were not associated with the Hexion elevated flare and associated fugitive emissions. Therefore, the insignificant activities were removed from the permit application for the Hexion flare and are represented in the appropriate Hexion Part 70 Permits.

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Permitted Air Emissions

Estimated changes in permitted emissions in tons per year are as follows:

Pollutant	Permitted Before	Permitted After	Permitted Change
PM_{10}	1.29	1.08	-0.21
SO_2	0.26	0.08	-0.18
CO	6.67	7.03	+0.36
NO_x	36.31	38.28	+1.97
VOC	12.92	20.01	+7.09

*VOC LAC 33:III Chapter 51 Toxic Air Pollutants (TAPs):

Pollutant	Before	After	Change
1,3-Butadiene	0.09	0.09	0.0
Benzotrichloride	<0.001	<0.01	0.0
Benzene	<0.001	0.0	0.0
Benzyl chloride	<0.001	<0.01	0.0
Chlorobenzene	0.01	0.007	0.0
Chloroethane	0.005	<0.01	0.0
o-Cresol	<0.001	<0.01	0.0
n-Hexane	0.07	0.0	-0.07
Methanol	<0.001	<0.01	0.0
Methyl Ethyl Ketone (MEK)	0.86	0.0	-0.86
Methyl Tertiary Butyl Ether (MTBE)	0.004	<0.01	0.0
Phthalic Anhydride	<0.001	<0.01	0.0
Toluene	0.05	0.11	+0.06
Total	1.089	0.207	-0.873

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Non-VOC LAC 33:III Chapter 51 Toxic Air Pollutants (TAPs):

Pollutant	Before	After	Change
Hydrochloric Acid	4.35	3.79	-0.56
Sulfuric Acid	<0.001	0.0	0.0
Hydrogen sulfide	<0.001	0.07	+0.07
Titanium tetrachloride	0.001	<0.01	0.0
Total	4.351	3.860	-0.491

Other VOC (TPY): 19.80

Regulatory Applicability

This application was reviewed for compliance with the Louisiana Part 70 operating permit program, Louisiana Air Quality Regulations, Louisiana Comprehensive TAP Emission Control Program, NSPS, NESHAP, and NSR regulations. Applicable requirements are provided in the permit regulatory applicability tables.

Prevention of Significant Deterioration

Hexion has not included any projects in this renewal application for the Hexion flare and associated fugitive emissions; therefore, Prevention of Significant Deterioration analyses are not required.

Nonattainment New Source Review

Hexion has not included any projects in this renewal application for the Hexion flare and associated fugitive emissions; therefore, Nonattainment New Source Review analyses are not required.

Compliance Assurance Monitoring (CAM) 40 CFR Part 64

Compliance Assurance Monitoring is not applicable because sources subject to NESHAP regulations published after November 15, 1990, are exempt from the CAM rule.

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MACT requirements

The Hexion flare and associated fugitive emissions are subject to the maximum achievable control technology (MACT) standards of the Hazardous Organic NESHAP (HON), 40 CFR 63 Subparts A F,G and H. The HON requirements that are applicable to each source are detailed in the regulatory applicability tables.

Air Modeling Analysis

Emissions associated with the proposed renewal/modification were reviewed by the Air Quality Assessment Division to ensure compliance with the NAAQS and AAS. LDEQ did not require the applicant to model emissions.

General Condition XVII Activities

There are no General Condition XVII Activities emissions associated with the Hexion flare and associated fugitive emissions.

Insignificant Activities

All Insignificant Activities are authorized under LAC 33:III.501.B.5.

The applicability of the appropriate regulations is straightforward and provided in the Facility Specific Requirements Section of the draft permit, or where provided, Tables 2, 3 and 4 of the draft permit. Similarly, the Monitoring, Reporting and Recordkeeping necessary to demonstrate compliance with the applicable terms, conditions and standards are provided in the Facility Specific Requirements Section of the draft permit, or where provided, Tables 2, 3 and 4 of the draft permit.

IV. Permit Shields

There are no permit shield requests included.

V. Streamlined Requirements

Source ID	Programs Being Streamlined	Stream Applicability	Overall Most Stringent Program
FUG0015 Area Fugitive Emissions - Flare (Source ID 230)	LAC 33:III.2121	10% VOC	40 CFR 63 Subpart H[1]
	40 CFR 60 Subpart VV	10% VOC	
	40 CFR 61 Subpart V	10% VOC	
	40 CFR 63 Subpart H	5% VOHAP	

[1] Based on an analysis of monitoring and record keeping requirements, 40 CFR 63 Subpart H is determined to be the most stringent requirement.

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VI. Glossary

Best Available Control Technologies (BACT) - An emissions limitation (including a visible emission standard) based on the maximum degree of reduction for each pollutant subject to regulation under this part which would be emitted from any proposed major stationary source or major modification which the administrative authority, on a case-by-case basis, taking into account energy, environmental, and economic impacts and other costs, determines is achievable for such source or modification through application of production processes or available methods, systems, and techniques, including fuel cleaning or treatment or innovative fuel combustion techniques for control of such pollutant.

Carbon Monoxide (CO) – A colorless, odorless gas which is an oxide of carbon.

Grandfathered Status- Those facilities that were under actual construction or operation as of June 19, 1969, the signature date of the original Clean Air Act. These facilities are not required to obtain a permit. Facilities that are subject to Part 70 (Title V) requirements lose grandfathered status and must apply for a permit.

Halogenated Vent Stream or halogenated Stream – a vent stream from a process vent to transfer operation determined to have a mass emission rate of halogen atoms contained in organic compounds of 0.45 kilograms (1 pound) per hour or greater determined by the procedures presented in 40 CFR 63.115(d)(2)(v) of NESHAP Subpart G.

Hydrogen Disulfide (H_2S) - A colorless inflammable gas having the characteristic odor of rotten eggs, and found in many mineral springs. It is produced by the action of acids on metallic sulfides, and is an important chemical reagent.

Maximum Achievable Control Technology (MACT) - The maximum degree of reduction in emissions of each air pollutant subject to LAC 33:III.Chapter 51 (including a prohibition on such emissions, where achievable) that the administrative authority, upon review of submitted MACT compliance plans and other relevant information and taking into consideration the cost of achieving such emission reduction, as well as any non-air-quality health and environmental impacts and energy requirements, determines is achievable through application of measures, processes, methods, systems, or techniques.

New Source Review (NSR) - A preconstruction review and permitting program applicable to new or modified major stationary sources of air pollutants regulated under the Clean Air Act (CAA). NSR is required by Parts C ("Prevention of Significant Deterioration of Air Quality") and D ("Nonattainment New Source Review").

Nitrogen Oxides (NO_x) - Compounds whose molecules consists of nitrogen and oxygen.

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Nonattainment New Source Review (NNSR) - A New Source Review permitting program for major sources in geographic areas that do not meet the National Ambient Air Quality Standards (NAAQS) at 40 CFR Part 50. Nonattainment NSR is designed to ensure that emissions associated with new or modified sources will be regulated with the goal of improving ambient air quality.

Organic Compound - Any compound of carbon and another element. Examples: Methane (CH_4), Ethane (C_2H_6), Carbon Disulfide (CS_2)

Part 70 Operating Permit- Also referred to as a Title V permit, required for major sources as defined in 40 CFR 70 and LAC 33:III.507. Major sources include, but are not limited to, sources which have the potential to emit: $\geq$ 10 tons per year of any toxic air pollutant; $\geq$ 25 tons of total toxic air pollutants; and $\geq$ 100 tons per year of regulated pollutants (unless regulated solely under 112(r) of the Clean Air Act) (25 tons per year for sources in non-attainment parishes).

PM_{10}- Particulate matter with an aerodynamic diameter less than or equal to a nominal 10 micrometers as measured by the method in Title 40, Code of Federal Regulations, Part 50, Appendix J.

Potential to Emit (PTE) - The maximum capacity of a stationary source to emit any air pollutant under its physical and operational design.

Prevention of Significant Deterioration (PSD) – A New Source Review permitting program for major sources in geographic areas that meet the National Ambient Air Quality Standards (NAAQS) at 40 CFR Part 50. PSD requirements are designed to ensure that the air quality in attainment areas will not degrade.

Sulfur Dioxide (SO_2) – An oxide of sulphur.

Title V permit – See Part 70 Operating Permit.

Volatile Organic Compound (VOC) - Any organic compound which participates in atmospheric photochemical reactions; that is, any organic compound other than those which the administrator of the U.S. Environmental Protection Agency designates as having negligible photochemical reactivity.